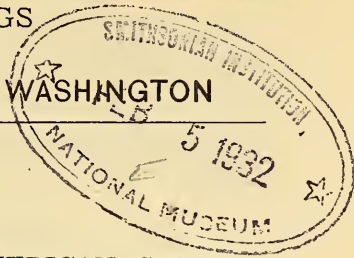


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

ON FIFTEEN NEW NORTH AMERICAN SPIDERS.

BY RALPH V. CHAMBERLIN AND WILLIS J. GERTSCH.

The new spiders described in the present paper were detected by the authors while identifying several general collections of spiders. They pertain chiefly to the clubionid genera *Phruonellus* and *Phrurolithus* as these have been defined by the senior author, in whose collection the types are deposited.

CLUBIONIDAE.

Genus *Phruonellus* Chamberlin.*Phruonellus* Chamberlin. Can. Ent. 53 : 69, 1921.

Cephalothorax nearly circular, narrowed in head region, uniformly colored in black or brown, without definite pattern. Anterior eye row procurved, the medians usually smaller than the laterals. Posterior eye row slightly procurved or straight. Width of clypeus variable, less than the diameter of an anterior lateral eye to three times as wide, highest in males. Labium wider than long. Endites broadest at middle. Anterior femora often darkened. First tibia armed below with five pairs of spines. Palpus of male large, the femur with a hooked knob basally or at middle, the tibia with a two-spurred apophysis. Abdomen dark above, unmarked, or with white spots.

Genotype.—*Phrurolithus formica* Banks.*Phruonellus formidabilis*, sp. nov.

Male.—Cephalothorax uniform blackish throughout. Sternum, maxillae, and labium blackish, lighter than the carapace. Legs yellow except the femur of the first which is black dorsally and on the sides and yellow on the ventral surface, and the femurs of the other three legs which have black bands on the lateral surfaces. Palpus blackish. Abdomen shining black, with a faint indication of an antero-longitudinal and a median transverse lighter band on dorsum. Venter blackish. Spinnerets yellow.

Eyes of both rows procurved, those of the second row equal in size and equidistant, those of the anterior row with the medians smaller and farther apart than a median and a lateral. Clypeus about twice as wide as the diameter of an anterior lateral eye.

Femur of male palpus with a hooked knob near the base below. Tibia of palpus with a ventral and a lateral apophysis, the lateral extension long and distally curved downward.

Length. 2.1 mm.

Type locality.—A male from Fish Lake, Utah, taken September 4, 1929. A male paratype from the same locality.

***Phruronellus pelvicolens*, sp. nov.**

Male.—Cephalothorax uniform brown. Sternum yellow, blackish on margins. Maxillae and labium yellow. All the legs and the basal joints of palpi yellow. Abdomen brown to black, lighter in middle region. Venter brown to black. Spinnerets yellow.

Eyes of posterior row straight, equal in size and equidistant, the anteriors slightly procurved, the medians smaller and separated by more than their radius, subcontiguous with the laterals. Clypeus about twice the diameter of an anterior lateral eye.

Femur of male palpus with a hooked knob near the base beneath. Tibia with a long ventral and longer lateral apophysis, the latter slightly curved.

Length, 2.05 mm.

Female.—Eyes of first row procurved, medians smaller, less than a radius apart, subcontiguous with laterals. Posterior row of eyes straight, the medians oblique, less than a radius apart, slightly farther, a radius, from laterals. Clypeus once and a half as wide as the diameter of an anterior lateral eye.

Type locality.—A male (holotype) from Mt. Ellen, Henry Mountains (Wayne County), Utah, taken September 11, 1929. A male paratype from the same locality. Other locality: Males from Montpelier (Bear Lake County), Idaho.

Discussion.—This species differs from others of the genus in having the femora without black markings.

***Phruronellus pictus*, sp. nov.**

Male.—Carapace brown to black. Sternum and labium blackened, coxae and maxillae yellow. Legs yellow, femur of first leg black, last three femora black with lateral yellow bands. Palpus blackened. Dorsum black with indistinct lighter spots at the middle. Venter black, lighter than the dorsum. Spinnerets white.

Eyes of posterior row slightly procurved, equal in size, the medians oblique and slightly nearer to each other, less than a radius, than to the laterals, separated by approximately a radius. Anterior eyes procurved, the medians smaller, separated by more than a radius, subcontiguous with the laterals.

Femur of male palpus with a hooked apophysis near the base beneath. Tibia of palpus with two long spurs, the lateral extension longer.

Length, 2.05 mm.

Female.—Colored like the male except that the posterior femora are without black markings and with the lighter spots on the dorsum well

defined, white, and another small white spot at the distal end of the abdomen.

Epigynum much like that of *P. pugnatus* Emerton.

Length, 2.1 mm.

Type locality.—Male holotype from Bountiful, Utah, March 29, 1929.

Female allotype from same locality.

Phruronellus californicus, sp. nov.

Female.—Carapace brown throughout. Sternum, maxillae yellow, tinged with black on margin. Labium dark. Legs yellow, the first and second femora blackened, the first tibia slightly. Abdomen black on dorsum, with indistinct spots and chevrons. Venter lighter, lightest at base. Spinnerets white.

The eyes of the anterior row procurved, the medians smaller, separated by more than their radius and subcontiguous with the laterals. The posterior eyes straight, equal in size and equidistant. Clypeus about as wide as the diameter of an anterior lateral eye.

Type locality.—Female holotype from Berkeley, Calif.

Phruronellus floridae, sp. nov.

Female.—Cephalothorax uniform black. Sternum blackish, darkest on the margins. Labium and endites only slightly tinged with black. Legs yellow, femurs blackened. Abdomen black with two rather well defined lighter blotches at middle of dorsum. Venter grayish. Extreme caudal portion of abdomen with a white spot. Spinnerets gray.

The eyes of the anterior row procurved, about equal in size, the medians a radius apart, subcontiguous with the laterals. The eyes of the posterior row about straight, about equal in size, spaced equidistantly. Clypeus about as wide as the diameter of an anterior lateral.

Spermathecae of epigynum of female about a radius apart.

Type locality.—Female holotype from Newman's Lake, Florida. R. V. Chamberlin, Coll.

Phruronellus minnetonka, sp. nov.

Male.—Carapace brown throughout. Sternum, maxillae, and labium yellowish, tinged with black on margins. Legs yellow except femur I and II which have lateral black stripes. Abdomen dark brown to black on dorsum, paler on venter. Spinnerets white.

The eyes of the anterior row procurved, medians smaller, separated by a radius and subcontiguous with the laterals. Posterior row straight, equal in size, equidistant, the medians oblique. Clypeus scarcely twice as wide as an anterior lateral eye.

Femur of male palpus with a hooked process near the basal end. Tibia armed on the outside with a long tapering process and a ventral branch of almost equal length.

Length, 2.05 mm.

Female.—Marked as in male.

Epigynum with the spermathecae round, their diameter apart. Epigynal openings transverse, rather close together.

Length, 2.1 mm.

Type locality.—Male holotype from Minnetonka, Minn. Female allotype and male and female paratypes from the same locality.

Other locality.—Starkville, Miss.

Genus *Phrurolithus* C. Koch.

Phrurolithus C. Koch. 1839. Die Arachniden, VI, p. 105.

Phrurolithus (sens. str.) Chamberlin, Can. Ent., 53, p. 69, 1921.

Cephalothorax nearly circular, narrowed anteriorly, yellow with black markings. Anterior eyes about equal in size, procurved. Posterior eyes near straight, about equal in size. Width of clypeus about the width of an anterior lateral eye or less in both sexes. Labium wider than long. Endites broadest at middle. Anterior tibiae blackened, the first armed below with six or seven pairs of spines. Palpus of male large, the femur with a low hump below, the tibia with a single long apophysis on the outer side. Abdomen with more or less distinct chevrons.

Genotype.—*G. festivus* C. Koch.

Phrurolithus mormon, sp. nov.

Male.—Carapace yellow, blackened at cephalic end and along radial striae, margined in black. Sternum, maxillae, labium and coxae yellow. Legs all yellow except the first tibiae which are blackened. Dorsum of abdomen black. Venter grayish, caudally with a few black marks. Spinnerets gray.

All eyes but the posterior medians on black patches. Anterior row of eyes procurved, about equal in size, the medians a radius apart, subcontiguous with the laterals. Posterior row of eyes straight, about equal in size, spaced equidistantly. Clypeus less than the diameter of an anterior lateral eye.

Femur of male palpus with a low hump at distal end below; the tibia with a long curved process which remains broad until distally where it terminates acutely.

Length, 2.1 mm.

Female.—Carapace yellow with blackish markings at radial and cephalic striae, margined with black. Sternum, maxillae, labium yellow. All legs yellow, anterior tibiae slightly darkened. Abdomen blackish, posteriorly with four or five more or less distinctly indicated chevrons. Extreme caudal region white. Venter grayish. Spinnerets white, the region ringed with black.

Spermathecae of epigynum oval, their diameter apart. Epigynal openings about a diameter apart.

Clypeus less than the diameter of an anterior lateral eye.

Length, 2.35 mm.

Type locality.—Male holotype from Salt Lake City, Utah, taken March 3, 1928. Female allotype and male and female paratypes from same locality.

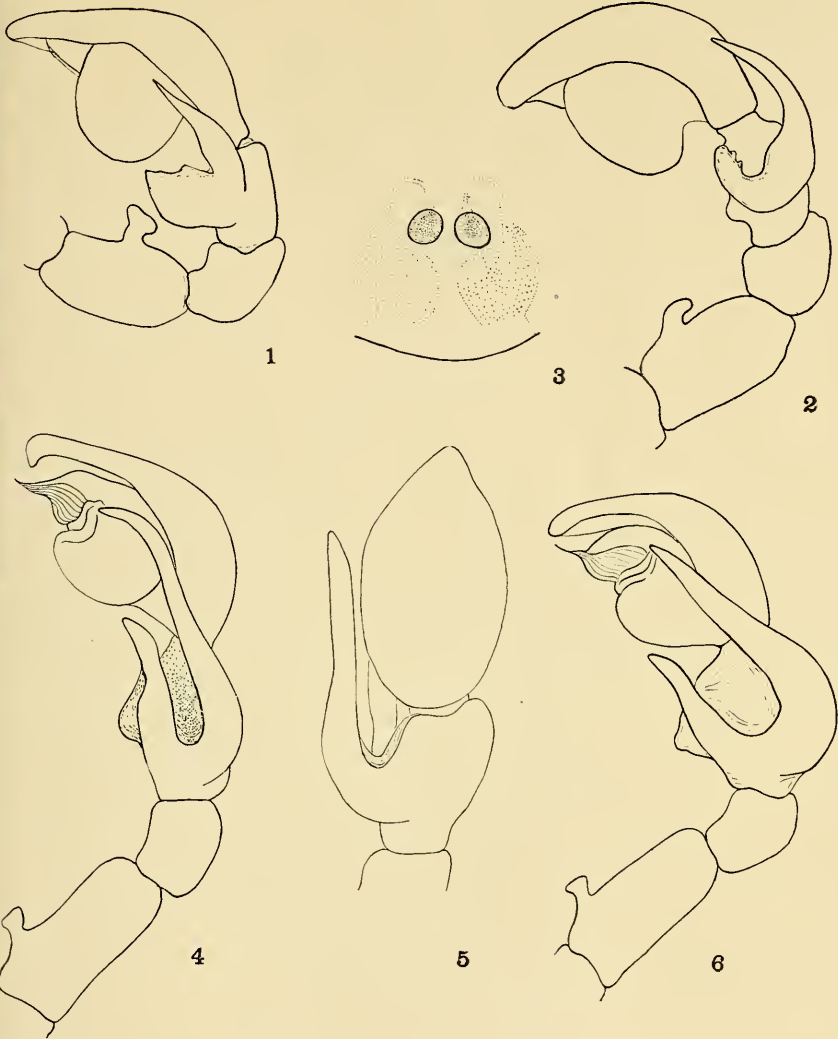


Fig. 1. *Phruronellus formica*, left male palpus, ectal view.
Fig. 2. Left male palpus, ectal view, of *Phruronellus similis*.
Fig. 3. Epigynum of *P. similis*.
Fig. 4. Left male palpus, ectal view, of *Phruronellus formidabilis*, sp. nov.
Fig. 5. Dorsal view of the same.
Fig. 6. Left male palpus, ectal view, of *Phruronellus petricolens* sp. nov.

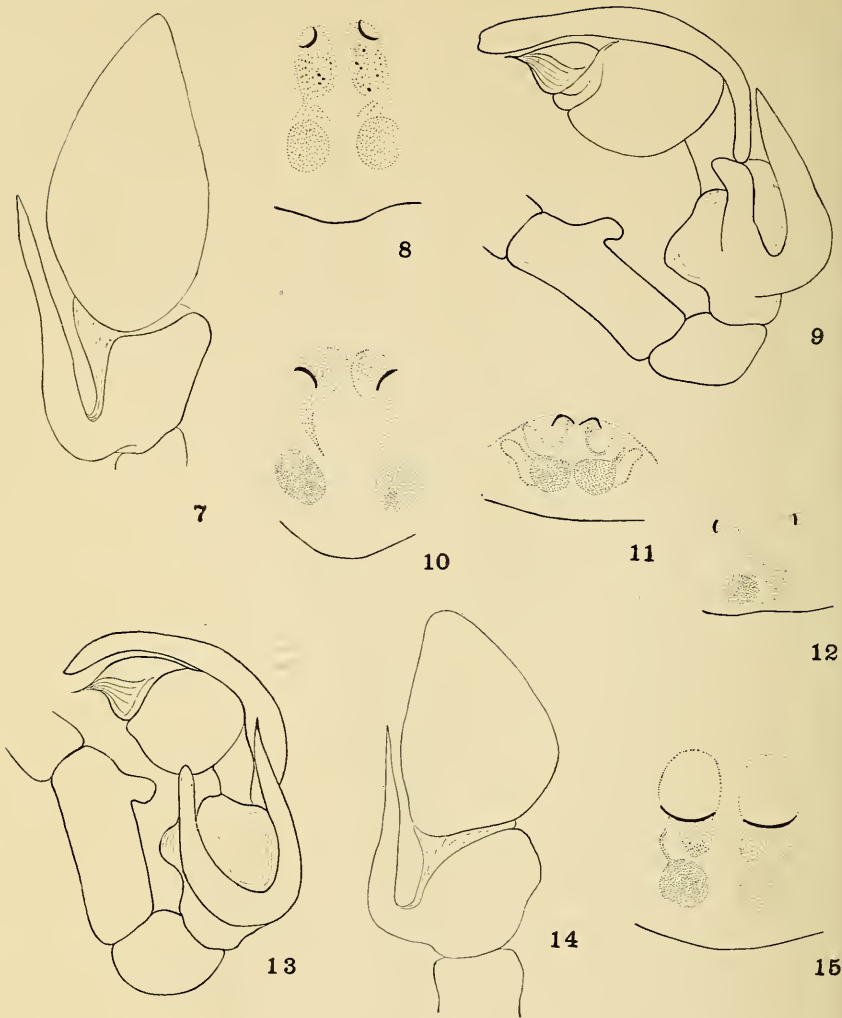
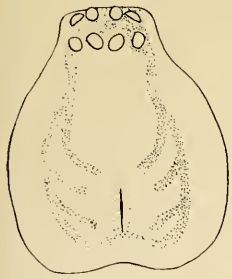
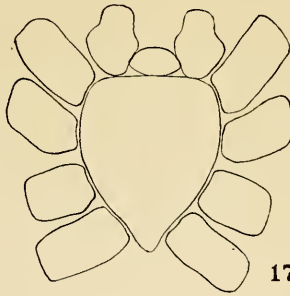


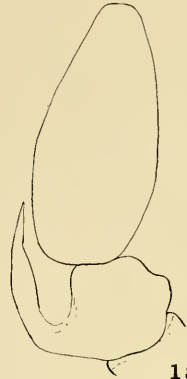
Fig. 7. Left male palpus, dorsal view, of *Phruronellus pelvicolens* sp. nov.
 Fig. 8. Epigynum of the same.
 Fig. 9. Left male palpus, ectal view, of *Phruronellus pictus* sp. nov.
 Fig. 10. Epigynum of the same.
 Fig. 11. Epigynum of *Phruronellus californica* sp. nov.
 Fig. 12. Epigynum of *Phruronellus floridae* sp. nov.
 Fig. 13. Left male palpus, ectal view, of *Phruronellus minnetonka* sp. nov.
 Fig. 14. Left male palpus, dorsal view, of the same.
 Fig. 15. Epigynum of the same.



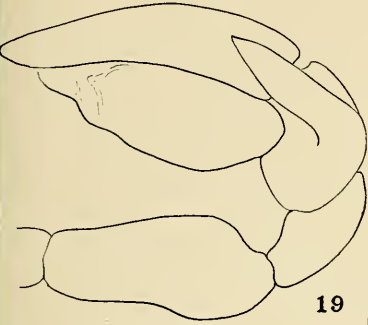
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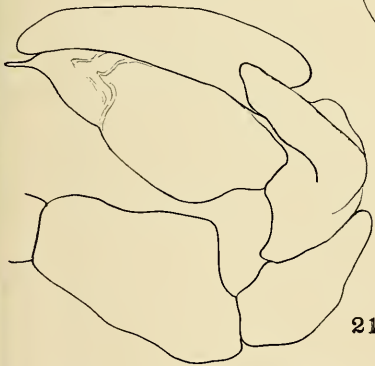
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Fig. 16. Cephalothorax, dorsal view, of *Phrurolithus mormon* sp. nov.

Fig. 17. Sternum and adjacent parts of appendages, of the same.

Fig. 18. Left male palpus, dorsal view of the same.

Fig. 19. Left male palpus, ectal view of the same.

Fig. 20. Epigynum of the same.

Fig. 21. Left male palpus, ectal view, of *Phrurolithus mateonus* sp. nov.

Fig. 22. Left male palpus, dorsal view, of the same.

Fig. 23. Epigynum of *Phrurolithus kentuckyensis* sp. nov.

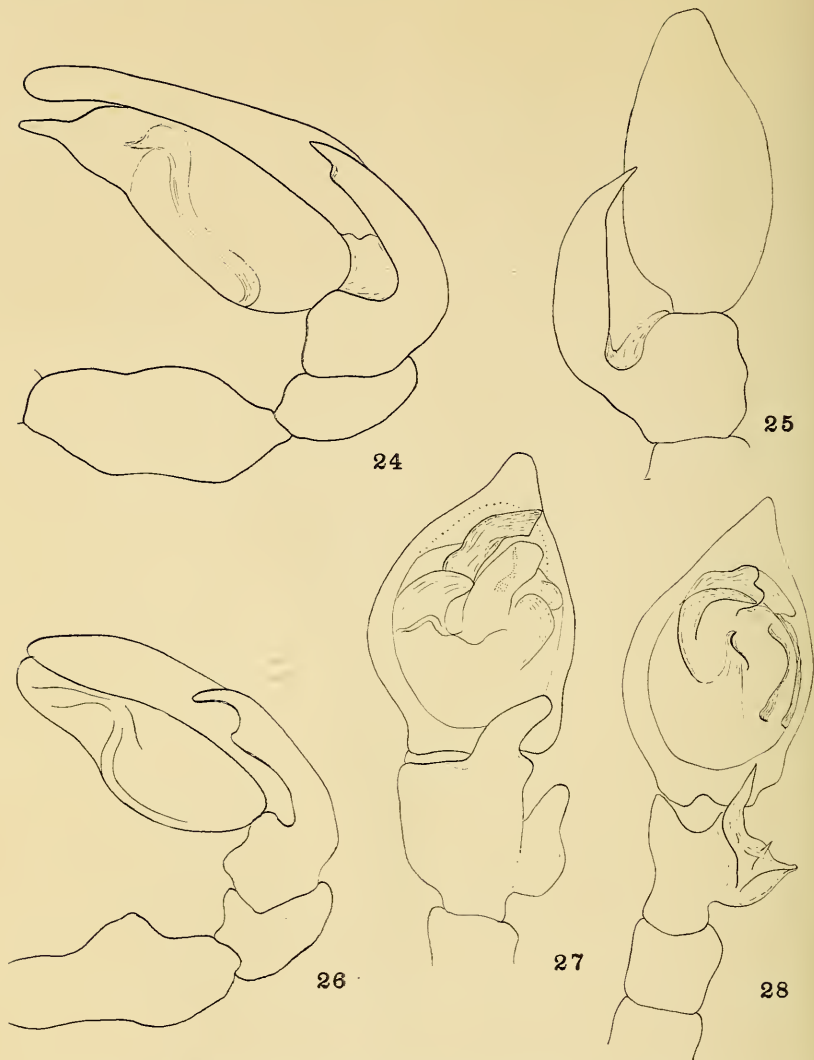


Fig. 24. Left male palp, ectal view, of *Phrurolithus kentuckyensis* sp. nov.

Fig. 25. Left male palp, dorsal view, of the same.

Fig. 26. Left male palp, ectal view, of *Phrurolithus tejanus* sp. nov.

Fig. 27. Left male palp, ventral view, of *Agelena oquirrhensis* sp. nov.

Fig. 28. Left male palp, ventral view of *Agelena intermedia* sp. nov.

Phrurolithus mateonus, sp. nov.

Male.—Cephalothorax margined with a narrow black stripe. Pars cephalica laterally invaded by black markings that extend posteriorly around the pars thoracica, darkest in region of radial striae, leaving a median longitudinal yellow band from the eye region back nearly to posterior margin, and a light submarginal band around the carapace. Sternum, maxillae and labium yellow. Legs yellow (anterior legs missing in holotype). Dorsum of abdomen blackish, with a white spot in caudal region; venter white basally, blackish distally. Spinnerets yellow, ringed in black.

Anterior row of eyes procurved, equal in size, medians separated by less than a diameter and subcontiguous with the laterals. Posterior eyes nearly straight, about equal in size, the medians oval, distinctly more than a radius apart, less than a radius from the laterals. Clypeus as wide as the diameter of an anterior lateral eye.

Distal end of femur of palpus with a low hump armed with stiff hairs. Tibia with a long curved process.

Length, 2.3 mm.

Type locality.—Male holotype from Jasper Ridge (San Mateo Co.), California, 1920 (J. C. Chamberlin, coll.). A male paratype from Berkeley, Calif.

Discussion.—A male from Berkeley is referred to this species with some doubt. In this specimen the tibial apophysis is acutely ended, slightly longer than in *P. mormon*.

Phrurolithus kentuckyensis, sp. nov.

Male.—Carapace yellow, margined in black, lateral and cephalic striae with a few black markings. All eyes except posterior medians on black patches. Labium, maxillae, and sternum yellow. Legs yellow except the first femur, patella and tibia which are blackened. Basal half of dorsum of abdomen blackish with yellow markings; posterior portion with four black chevrons. Venter gray to white, with darker markings distally. Spinnerets white, ringed with black.

Anterior row of eyes procurved, about equal in size, medians separated by their radius, subcontiguous with the laterals; posterior row of eyes straight, about equal in size, equally spaced, about a radius apart. Clypeus slightly less than diameter of anterior lateral eye.

Femur of palpus with a low rounded hump near distal end below. Tibia armed with a long flat curved process that is distinctly notched near distal end.

Length, 2.3 mm.

Female.—Carapace with black markings more distinct than in male. Sternum, labium, and maxillae yellow. Legs yellow, the first two indistinctly, the last two distinctly annulate in black. Abdomen gray to yellow, with broken black chevrons on dorsum; venter gray to white with two dark spots midway between epigynum and spinnerets. Spinnerets white.

Anterior row of eyes procurved, about equal in size, the medians sep-

arated by their radius, subcontiguous with the laterals; posterior row of eyes straight, about equal in size, nearer to each other, less than a radius apart, than to the laterals, a radius apart. Clypeus less than the diameter of an anterior lateral eye.

Epigynum with the spermathecae less than a diameter apart.

Length, 2.9 mm.

Type locality.—A male from Quicksand, Kentucky. Female allotype and male and female paratypes from the same locality.

Phrurolithus tejanus, sp. nov.

Male.—Cephalothorax yellow, margined with a narrow black stripe, with a few black markings at cephalic and radial striae. Sternum, maxillae, labium, yellow. Legs yellow, the distal end of femur, the patella and most of tibia of first pair of legs darkened, the other legs with black annulae. Palpi yellow with brown markings. Dorsum of abdomen yellow with distinct broken chevrons at the distal end, darkened on the sides in the basal region. Venter yellow with a few black maculations near spinnerets, which are yellow in color.

The first row of eyes procurved, the medians smaller, separated by less than a radius and subcontiguous with the laterals. Posterior row of eyes straight, equal in size, the medians separated by about a radius, separated from the laterals by less than a radius. Clypeus as wide as the diameter of an anterior lateral eye.

Distal end of femur of palpus with a low hump armed with stiff hairs. Tibia with a long curved process that is hooked distally.

Length, 2.8 mm.

Type locality.—Male holotype from Austin, Texas (R. V. Chamberlin).

AGELENIDAE.

Agelena oquirrhensis, sp. nov.

Male.—A light colored form. Cephalothorax with yellow median longitudinal band and lateral bands, the intervals with some short black hairs. Legs all yellow, with spines and hairs black. Chelicerae and labium brown, maxillae and sternum yellow. Palpi yellow to the tibia and tarsus which are brown to black. Abdomen with black hairs, gray to black, with a conspicuous yellow longitudinal stripe the length of the dorsum. Venter yellow to white, laterally with two interrupted narrow black stripes. Spinnerets yellow, the apical joint of the hind one shorter than the penultimate.

Eyes of second row recurved, equal in size, the medians slightly closer to each other than to a lateral, with the lateral and a median nearly a diameter apart. Front row recurved, equidistant, laterals slightly larger. All eyes on black spots.

Tibia I with three pairs of spines. Tibia II with an apical and submedian pair and a single basal spine. Lower margin of chelicera with two teeth, the upper with three. Tarsus of male palpus with a heavy black chitinized conductor. Tibia as broad as long with two heavy processes on the outer side.

Female.—Pattern as in male but darker in color. Spines and chelicerae as in male.

Type locality.—Male holotype from Butterfield Canyon (Oquirrh Mountains), Utah, taken in April, 1929 by Ralph Goodwin. Mature allotype from same locality.

***Agelena intermedia*, sp. nov.**

Male.—Carapace reddish brown with a lighter median longitudinal band that is as wide as the eye rows and two lateral lighter marginal bands scarcely as wide, the three clothed with short white hairs, the intervals between black with black hairs. Chelicerae, maxillae, labium, and sternum brown with black hairs. Legs lighter in color, with indistinct brown annulae and blotches, clothed with black and white hairs. Abdomen with black and white hairs; dorsum with an indistinct longitudinal light brown stripe flanked on each side by black regions that extend laterally to the venter, which is light brown. Spinnerets light brown, the distal joint of hind pair shorter than the penultimate.

Eyes in two procurved rows, those of the posterior equidistant and equal in size, about a diameter apart, those of the anterior row slightly larger than the posteriors, equidistant, less than a diameter apart.

Tibia I armed beneath with six spines, a basal, a submedian, and an apical pair. Tibia II with one of the basal pair missing. Tibia of palpus presenting a pointed ventral distal process that extends somewhat over the cymbium, a blunt excavated projection on the outside, and a short dorsal process. Tarsus of palpus as in *A. californica* Banks. Lower margin of the furrow of the chelicerae with three teeth (the smaller middle one missing on the right chelicera of the holotype, but paratypes (immature females) with three teeth on the margin).

Type locality.—Male holotype from La Honda (San Mateo Co.), California, taken by J. C. Chamberlin, Nov. 4, 1922.

***Dendryphantes unicus*, sp. nov.**

Male.—Carapace black to brown, sparsely covered with whitish hairs; ocular region black with black setae that project over the anterior eye row. Sternum brown; labium brown, longer than wide and anteriorly rounded; maxillae brown with a small but distinct hook at the anterior outer margins. Chelicerae brown, the lower margin of the furrow with one tooth, with two smaller teeth on the upper margin. First pair of legs yellow, except femur which is brown, sparsely set with black setae and clothed with white hairs, longest under femur. Last three pairs of legs and palpus yellow with some brownish spots, sparsely clothed with white hairs. Dorsum of abdomen black with indistinct lighter spots and transverse chevrons in the posterior portion, thickly set with whitish hairs; venter gray, clothed with white hairs.

Spines: Tibia I three pairs below, II one pair and one singly behind; metatarsus I and II two pairs below each. Tibia of palpus with two processes of about equal length, one dorsal and one lateral on the outer side; tube of palpus heavy, gradually elongated and truncately ended.

This species may be distinguished from all other forms from the United States by the peculiar double apophysis on the tibia of the male palpus.

Type locality.—A male from Uintah Co., Utah, taken by R. V. Chamberlin, Jr., October, 1928.

***Dendryphantes concoloratus*, sp. nov.**

Male.—Carapace reddish brown with a few white hairs on the sides. Eyes on black spots, those of the second row nearer to the first row than the third. Sternum yellow; labium brown, about as long as wide; maxillae brown, the anterior margin rounded, the outer side with a blunt point. Chelicerae with a single tooth on the lower margin, two on the upper. Distal joints of first leg light brown, femur, coxa, and trochanter white, sparsely clothed with white hairs. Three hind pairs of legs white to yellow, clothed with white hairs. Proximal joints of palpus yellow, tarsus brown, clothed with white hairs. Abdomen with a wide white stripe on each side of dorsum, in the middle reddish brown with darker marks arranged in indistinct chevrons; venter light brown.

Spines: Tibia I three pairs below, II two pairs and one singly behind; metatarsus I and II two pairs below. The tibial apophysis of palpus simple; the embolus bifurcate, one of the branches considerably longer than the other. In the type the right first leg has been lost and the one replaced (much shorter than the left one) does not show spine characteristics.

Type locality.—The male holotype from near Woodside, California, January 29, 1928, taken by J. C. Chamberlin.

***Dendryphantes verecundus*, sp. nov.**

Male.—Carapace reddish brown, darker on the sides, with a few black setae on the ocular region. Eyes on black spots, the middle row nearer the front eyes, a heavy band of white scales beginning at each lateral eye of the first row and continuing on the sides posteriorly around the carapace to a point below the median furrow where they nearly meet from each side; area of ocular quadrangle with a few white scales. Sternum, maxillae, and chelicerae brown. Coxa, trochanter, and femur of leg I black, the remainder of leg yellow with wide brown annulae at the articulations of the joints. Coxae and trochanter of legs II, III, and IV white, femurs black, remainder of leg yellow with brown annulae at the articulations of the joints; all legs clothed sparsely with black and white hairs; palpus brown with a few white hairs on femur above. Dorsum of abdomen brown with a basal and half a dozen transverse white bands, which are indistinct through the middle region; venter blackish, lighter at the sides.

Spines: Tibia I three pairs below, II one pair and two behind; metatarsus I and II two pairs below. Chelicerae with a single tooth on the lower margin of the furrow, with two smaller teeth above. Tibial apophysis of male palpus simple; embolus heavy and truncate.

Type locality.—The male holotype from Dry Canyon, Salt Lake City, Utah, June 14, 1929, taken by W. J. Gertsch; male paratypes from same region.